

WHAT IS CLAIMED IS:

1. A blood vessel extroverting instrument used to turn an end of a blood vessel inside out, said instrument comprising:

a contact portion to be brought into contact with an end of a blood vessel;

a supporting portion on which said contact portion is supported; and

an operating mechanism for increasing and reducing the diameter of said contact portion,

wherein at least two portions of the end of the blood vessel in the radial direction can be simultaneously expanded and/or reversed by operating said operating mechanism.

2. A blood vessel extroverting instrument according to claim 1, wherein:

said contact portion comprises a ring portion formed of a wire-like member in the form of a substantially circular ring, said ring portion being supported on said supporting portion, and the operating mechanism increasing and reducing the diameter of said ring portion being increased and reduced; and

said ring portion is inserted into the blood vessel through the opening of the end of the blood vessel while being maintained in the state of having its diameter reduced, and the diameter of said ring portion is thereafter increased.

3. A blood vessel extroverting instrument according to claim 2, wherein said contact portion is made of an elastic material or a superelastic material.

4. A blood vessel extroverting instrument according to claim 2, further comprising a regulatory means for regulating said operating mechanism.

5. A blood vessel extroverting instrument according to claim 4, wherein said regulatory means includes an adjustment means capable of position adjustment.

6. A blood vessel extroverting instrument according to claim 2, wherein: said supporting portion has a pair of arms; said wire-like member forming said ring portion is connected to distal ends of said arms; and the diameter of said ring portion is changed by changing the distance between the distal ends of said pair of arms.

7. A blood vessel extroverting instrument according to claim 6, wherein said wire-like member or said pair of arms include intermediate portions intersecting each other.

8. A blood vessel extroverting instrument according to claim 2, wherein the diameter of said ring portion is changed by changing the length of said wire-like member forming said ring portion.

9. A blood vessel extroverting instrument according to claim 8, wherein the length of said wire-like member is changed by causing said wire-like member to extrude from or retract into a distal end of an insertion portion on a distal end of said supporting portion.

10. A blood vessel extroverting instrument according to claim 1, wherein said contact portion is in the state of having its diameter reduced when said supporting portion is in an unrestrained state, and the diameter of said contact portion is increased when said supported portion is in an urged state.

11. A blood vessel extroverting instrument according to claim 1, wherein:

said contact portion comprises a bundle of wire-like members extending radially from a proximal end connected to said supporting portion toward a distal end, said bundle of wire-like members being supported on said supporting portion, and an expanded outer configuration of said bundle of wire-like members at the distal end is changed by said operating mechanism; and

 said bundle of wire-like members is inserted into the blood vessel through the opening of the end of the blood vessel while being maintained in the state of having the diameter of the expanded outer configuration at the distal end reduced, and the diameter of the outer configuration of said bundle of wire-like members at the distal end is thereafter increased.

12. A blood vessel extroverting instrument according to claim 11, wherein said contact portion is made of an elastic material or a superelastic material.

13. A blood vessel extroverting instrument according to claim 11, further comprising a regulatory means for regulating said operating mechanism.

14. A blood vessel extroverting instrument according

to claim 13, wherein said regulatory means includes an adjustment means capable of position adjustment.

15. A blood vessel extroverting instrument according to claim 11, wherein said operating mechanism comprises a hollow tubular member capable of covering the periphery of said bundle of wire-like members and moving along the lengthwise direction of said bundle of wire-like members.

16. A blood vessel extroverting instrument according to claim 11, wherein:

 said hollow tubular member has an inside diameter smaller than the expanded outer configuration of said bundle of wire-like members at the distal end;

 the diameter of the expanded outer configuration of said bundle of wire-like members at the distal end is reduced by moving said hollow tubular member toward the distal end of said bundle of wire-like members; and

 the diameter of the expanded outer configuration of said bundle of wire-like members at the distal end is increased by moving said hollow tubular member in the direction from the distal end to the proximal end of said bundle of wire-like members.

APPLIED FOR
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

17. A blood vessel extroverting instrument according to claim 11, further comprising a grip portion provided at a proximal end of said supporting portion.

18. A set of a blood vessel extroverting instrument according to claim 2 or 11 and a clip ring capable of being fitted around a blood vessel.